

Appl. No. 10/766,250
Amdt. dated February 20, 2006
Reply to Office Action of November 21, 2005
Attorney Docket 17299

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A suspended, articulated front axle for a work vehicle having a central body having a longitudinal axis of symmetry, said front axle comprising:
a central axle portion extending perpendicular to said longitudinal axis of symmetry over a width of the central body; and
two front axle shafts, each axle shaft being associated with a respective front wheel, the axle shafts extending laterally from the central ~~axle portion~~ body, each axle shaft including: ~~an inner shaft portion centered under the central body;~~ at least one intermediate portion having a longitudinal axis of symmetry that slopes by a sweep-back angle with respect to a line perpendicular to ~~then~~ longitudinal axis of symmetry of the vehicle, wherein the sweep-back angle is such that an outer end of the intermediate portion is located further back with respect to an inner end of the intermediate portion in a forward travelling direction of the work vehicle.
2. (original) The front axle according to claim 1 wherein the sweep-back angle produces a twofold reduction in turning radius by:
reducing a wheelbase of the vehicle from a first value to a second value so that a turning radius is reduced from a first value to a second value; and
enabling a turning angle of the inner wheel to increase from a first value to a second value whereby the turning radius is further reduced from the second value to a third value; the first turning angle value being upwardly limited by a first transmission joint between each wheel and its associated axle shaft.
3. (original) The front axle according to claim 2 wherein the maximum value of the sweep-back angle equals $\alpha''/2$, wherein α'' represents the difference in turning angle between the inner and outer front wheel of the vehicle when a turn is effected.
4. (original) The front axle according to claim 3 wherein the intermediate portion sloping by the sweep-back angle is an intermediate shaft of the axle shaft.
5. (original) The front axle according to claim 4 wherein the intermediate shaft is connected at one end to an inner shaft by a second joint and at the other end to an outer shaft by the first joint.

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transmission joint.

6. (original) The front axle according to claim 5, wherein the joints are universal joints.

7. (currently amended) A front suspension for a work vehicle having a central body having a longitudinal axis of symmetry, said suspension comprising a bottom arm and a substantially parallel top arm, both in the form of a double fork and connected at their outer ends to a cup-shaped, articulated support, a central axle portion extending perpendicular to said longitudinal axis of symmetry over a width of the central body and two front axle shafts, each axle shaft being associated with a respective front wheel, the axle shafts extending laterally from the central body, each axle shaft including: an inner shaft portion centered under the central body; at least one intermediate portion having a longitudinal axis of symmetry that slopes by a sweep-back angle with respect to a line perpendicular to a longitudinal axis of symmetry of the vehicle, wherein the sweep-back angle is such that an outer end of the intermediate portion is located further back with respect to an inner end of the intermediate portion in a forward travelling direction of the work vehicle and the suspension arms are is swept back at the same sweep-back angle as each axle shaft.

8. (original) The front axle according to claim 7 wherein the articulated support is adapted to house a hub carrier supporting a hub, the hub carrier being hingeably connected to the articulated support by means of aligned hinges.

9. (currently amended) The front axle according to claim 8, wherein the bottom and top arm of the suspension are connected at their inner ends to a lateral side of a front support member ~~provided in front of the engine of the vehicle and~~ forming part of the vehicle chassis, wherein the front support member supports the central body.

10. (currently amended) The front axle according to claim 9, wherein the bottom arm is hingeably connected to one end of a fluid actuator, the other end of said actuator being connected to the chassis of the vehicle, for varying the stiffness of the suspension ~~as a whole~~.

11. (original) The front axle according to claim 10 wherein each axle shaft is positioned substantially centrally between the bottom and top arms.

12.-22. (Withdrawn)